

NOVEMBER/DECEMBER 2025

FMB41/CMB41 — MICROBIAL GENETICS

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is plasmids?
2. Brief the chromosomal structure.
3. What are the mutagenic agents?
4. Define – DNA repair.
5. Short note on transcription.
6. Write about conjugation.
7. Narrate about *trp* operon.
8. Draw the structure of tRNA.
9. Describe the concept of gene.
10. Write a short account on Gene expression.



SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Give account different types of plasmids and their significance.

Or

- (b) Give an account on Hershey and chase experiment.

12. (a) Write about on mutation caused by chemical agents.

Or

- (b) Describe DNA damage and repair.

13. (a) Give an account on gene transfer mechanisms.

Or

- (b) Detailed account on process of conjugation.

14. (a) Describe in detail about gene expression.

Or

- (b) Give an account on the *lac* operon.

15. (a) Explain the importance gene mapping.

Or

- (b) Detailed account on mapping E.coli.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Give an account on the double helical structure of the DNA.

17. Write about on induced mutation.

18. Explain in detail about transduction.

19. Describe about classes of transposable elements.

20. Brief account on the structure of T4 bacteriophage.